

LIST OF SEQUENCES

INFORMATION REGARDING SEQ ID NO: 1

I- CHARACTERISTIC OF THE SEQUENCE:

- A) LENGTH:
- B) TYPE
- C) STRAND NUMBER
- D) CONFIGURATION

II - TYPE OF MOLECULE:

XI - SEQUENCE DESCRIPTION: SEQ ID NO: 1

INFORMATION REGARDING SEQ ID NO: 2

I- CHARACTERISTIC OF THE SEQUENCE:

- A) LENGTH:
- B) TYPE
- C) STRAND NUMBER
- D) CONFIGURATION

II - TYPE OF MOLECULE:

XI - SEQUENCE DESCRIPTION: SEQ ID NO: 2

INFORMATION REGARDING SEQ ID NO: 3

I- CHARACTERISTIC OF THE SEQUENCE:

- A) LENGTH:
- B) TYPE
- C) STRAND NUMBER
- D) CONFIGURATION

II - TYPE OF MOLECULE:

XI - SEQUENCE DESCRIPTION: SEQ ID NO: 3

INFORMATION REGARDING SEQ ID NO: 4

I- CHARACTERISTIC OF THE SEQUENCE:

- A) LENGTH:
- B) TYPE
- C) STRAND NUMBER
- D) CONFIGURATION

II - TYPE OF MOLECULE:

XI - SEQUENCE DESCRIPTION: SEQ ID NO: 4

All references cited in this text are expressly incorporated herein by reference.

REFERENCES

- Altschul, S.F., Gich, W., Miller, W., Myers, E.W. and Lipman, D.J. (1990) Basic local alignment search tool. *J. Mol. Biol.*, **215**, 403-410.
- Backx, P.H. and Marban, E. (1993) Background potassium current active during the plateau of the action potential in Guinea-pig ventricular myocytes. *Circulation Res.*, **72**, 890-900.
- Barhanin, J., Lesage, F., Guillemaire, E., Fink, M., Lazdunski, M. and Romey, G. (1996) KvLQT1 and IsK (minK) proteins associate to form the IKs cardiac potassium current. *Nature.*, **384**, 78-80.
- Borgula, G.A., Karwoski, C.J. and Steinberg, R.H. (1989) Light-evoked changes in extracellular pH in frog retina. *Vision Res.*, **29**, 1069-1077.
- Buckler, K.J. (1997) A novel oxygen-sensitive potassium current in rat carotid body type I cells. *J. Physiol. (London)*, **498**, 649-662.
- Chesler, M. (1990) The regulation and modulation of pH in the nervous system. *Prog. Neurobiol.*, **34**, 401-427.
- Chesler, M. and Kaila, K. (1992) Modulation of pH by neuronal activity. *Trends Neurosci.*, **15**, 386-402.
- Doupenik, C.A., Davidson, N. and Lester, H.A. (1995) The inward rectifier potassium channel family. *Curr. Opin. Neurobiol.*, **5**, 268-277.
- Fakler, B. and Ruppertsberg, J.P. (1996) Functional and molecular diversity classifies the family of inward-rectifier K⁺ channels. *Cell. Physiol. Biochem.*, **6**, 195-209.
- Fink, M., Duprat, F., Lesage, F., Heurteaux, C., Romey, G., Barhanin, J. and Lazdunski, M. (1996a) A

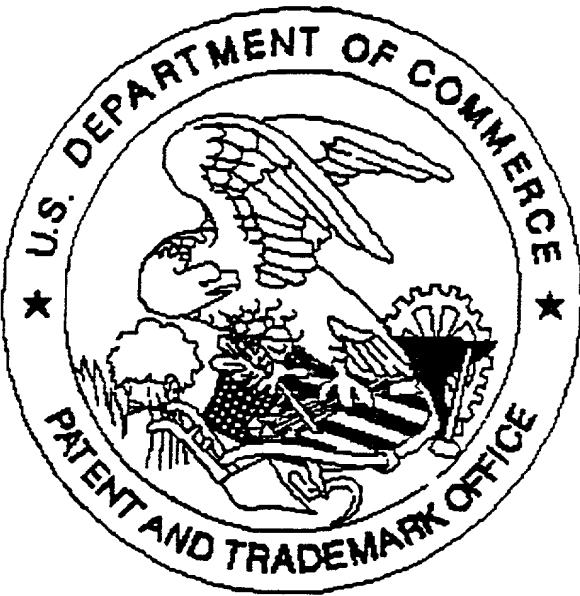
- new K⁺ channel β subunit to specifically enhance Kv2.2 (CDRK) expression. *J. Biol. Chem.*, **271**, 26341-26348.
- Fink, M., Duprat, F., Lesage, F., Reyes, R., Romey, G., Heurteaux, C. and Lazdunski, M. (1996b) Cloning, functional expression and brain localization of a novel unconventional outward rectifier K⁺ channel. *EMBO J.*, **15**, 6854-6862.
- Goldstein, S.A.N., Price, L.A., Rosenthal, D.N. and Pausch, M.H. (1996) ORK1, a potassium-selective leak channel with two pore domains cloned from *Drosophila melanogaster* by expression in *Saccharomyces cerevisiae*. *Proc. Natl. Acad. Sci. USA.*, **93**, 13256-13261.
- Guillemare, E., Honore, E., Pradier, L., Lesage, F., Schweitz, H., Attali, B., Barhanin, J. and Lazdunski, M. (1992) Effects of the level of messenger RNA expression on biophysical properties, sensitivity to neurotoxins, and regulation of the brain delayed-rectifier K⁺ channel Kv1.2. *Biochemistry.*, **31**, 12463-12468.
- Heginbotham, L., Lu, Z., Abramson, T. and Mackinnon, R. (1994) Mutations in the K⁺ channel signature sequence. *Biophys. J.*, **66**, 1061-1067.
- Hille, B. (1992) in (ed.) *Ionic channels of excitable membranes*. Sinauer Associates Inc., Sunderland, Massachusetts, pp. 1-607.
- Inagaki, N., Gonoi, T., Clement, J.P., Wang, C.Z., Aguilarbryan, L., Bryan, J. and Seino, S. (1996) A family of sulfonylurea receptors determines the pharmacological properties of ATP-sensitive K⁺ channels. *Neuron.*, **16**, 1011-1017.
- Jan, L.Y. and Jan, Y.N. (1994) Potassium channels and their evolving gates. *Nature.*, **371**, 119-122.
- Jurman, M.E., Boland, L.M. and Yellen, G. (1994) Visual identification of individual transfected cells for electrophysiology using antibody-coated beads. *BioTechniques.*, **17**, 876-881.
- Knaus, H.G., Folander, K., Garciacalvo, M., Garcia, M.L., Kaczorowski, G.J., Smith, M. and Swanson, R. (1994) Primary sequence and immunological characterization of beta-subunit of high conductance Ca²⁺-activated K⁺ channel from smooth muscle. *J. Biol. Chem.*, **269**, 17274-17278.
- Kohler, M., Hirschberg, B., Bond, C.T., Kinzie, J.M., Marrion, N.V., Maylie, J. and Adelman, J.P. (1996) Small-conductance, calcium-activated potassium channels from mammalian brain. *Science.*, **273**, 1709-1714.
- Koyano, K., Tanaka, K. and Kuba, K. (1992) A patch-clamp study on the muscarine-sensitive potassium channel in bullfrog sympathetic ganglion cells. *J. Physiol. (London)*, **454**, 231-246.
- Kraig, R.P., Ferreira-Filho, C.R. and Nicholson, C. (1983) Alkaline and acid transients in cerebellar microenvironment. *J. Neurophysiol.*, **49**, 831-851.

- Krishtal, O.A., Osipchuk, Y.V., Shelest, T.N. and Smirnoff, S.V. (1987) Rapid extracellular Ph transients related to synaptic transmission in rat hippocampal slices. *Brain Res.*, **436**, 352-356.
- Kyte, J. and Doolittle, R. (1982) A simple model for displaying the hydropathic character of a protein. *J. Mol. Biol.*, **157**, 105-106.
- Lesage, F., Attali, B., Lazdunski, M. and Barhanin, J. (1992) Developmental expression of voltage-sensitive K⁺ channels in mouse skeletal muscle and C2C12 cells. *FEBS Lett.*, **310**, 162-166.
- Lesage, F., Guillemaire, E., Fink, M., Duprat, F., Heurteaux, C., Fosset, M., Romey, G., Barhanin, J. and Lazdunski, M. (1995) Molecular properties of neuronal G-protein-activated inwardly rectifying K⁺ channels. *J. Biol. Chem.*, **270**, 28660-28667.
- Lesage, F., Guillemaire, E., Fink, M., Duprat, F., Lazdunski, M., Romey, G. and Barhanin, J. (1996a) TWIK-1, a ubiquitous human weakly inward rectifying K⁺ channel with a novel structure. *EMBO J.*, **15**, 1004-1011.
- Lesage, F., Lauritzen, I., Duprat, F., Reyes, R., Fink, M., Heurteaux, C. and Lazdunski, M. (1997) The structure, function and distribution of the mouse TWIK-1 K⁺ channels. *FEBS Lett.*, **402**, 28-32.
- Lesage, F., Reyes, R., Fink, M., Duprat, F., Guillemaire, E. and Lazdunski, M. (1996b) Dimerization of TWIK-1 K⁺ channel subunits via a disulfide bridge. *EMBO J.*, **15**, 6400-6407.
- Lingueglia, E., Voilley, N., Waldmann, R., Lazdunski, M. and Barbry, P. (1993) Expression cloning of an epithelial amiloride-sensitive Na⁺ channel. A new channel type with homologies to *Caenorhabditis elegans* degenerins. *FEBS Lett.*, **318**, 95-99.
- MacCobb, D.P., Fowler, N.L., Featherstone, T., Lingle, C.J., Saito, M., Krause, J.E. and Salkoff, L. (1995) A human calcium-activated potassium channel gene expressed in vascular smooth muscle. *Am. J. Physiol.-Heart Circ. Physiol.*, **38**, H767-H777.
- MacManus, O.B., Helms, L.M.H., Pallanck, L., Ganetzki, B., Swanson, R. and Leonard, R.J. (1995) *Neuron.*, **15**, 645-650.
- Mutch, W.A.C. and Hansen, A.J. (1984) Extracellular pH changes during depression and cerebral ischemia : mechanisms of brain pH regulation. *J. Cereb. Blood Flow Metab.*, **4**, 17-27.
- Nedergaard, M., Kraig, R.P., Tanabe, J. and Pulsinelli, W.A. (1991) Dynamics of interstitial and intracellular pH in evolving brain infarct. *Am. J. Physiol.*, **260**, R581-R588..
- Pongs, O. (1992) Molecular biology of voltage-dependent potassium channels. *Physiol. Rev.*, **72**, S69-S88.
- Pongs, O. (1995) Regulation of the activity of voltage-gated potassium channels by beta subunits. *Semin. Neurosci.*, **7**, 137-146.

- Rudy, B. (1988) Diversity and ubiquity of K⁺ channels. *Neuroscience.*, **25**, 729-749.
- Sanguinetti, M.C., Curran, M.E., Zou, A., Shen, J., Spector, P.S., Atkinson, D.L. and Keating, M.T. (1996) Coassembly of KvLQT1 and MinK (IsK) proteins to form cardiac I_{KS} potassium channel. *Nature.*, **384**, 80-83.
- Shen, K.Z., North, R.A. and Surprenant, A. (1992) Potassium channels opened by noradrenaline and other transmitters in excised membrane patches of guinea-pig submucosal neurones. *J. Physiol. (London)*, **445**, 581-599.
- Siegelbaum, S.A., Camardo, J.S. and Kandel, E. (1982) Serotonin and cyclic AMP close single K⁺ channels in Aplysia sensory neurones. *Nature.*, **229**, 413-417.
- Siesjö, B.K., von Hanwehr, R., Nerglius, G., Nevander, G. and Ingvar, M. (1985) Extra- and intracellular pH in the brain during seizures and in the recovery period following the arrest of seizure activity. *J. Cereb. Blood Flow Metab.*, **5**, 47-57.
- Takumi, T., Ohkubo, H. and Nakanishi, S. (1988) Cloning of a membrane protein that induces a slow voltage-gated potassium current. *Science.*, **242**, 1042-1045.
- Yamamoto, F., Borgula, G.A. and Steinberg, R.H. (1992) Effects of light and darkness on pH outside rod photoreceptors in the cat retina. *Exp. Eye Res.*, **54**, 685-697.

While present invention has been described with reference to specific embodiments thereof, it will be appreciated that numerous variations, modifications, and embodiments are possible, and accordingly, all such variations, modifications and embodiments are to be regarded as being within the spirit and scope of the present invention.

United States Patent & Trademark Office
Office of Initial Patent Examination -- Scanning Division



Application deficiencies found during scanning:

Page(s) _____ of _____ were not present
for scanning. (Document title)

Page(s) _____ of _____ were not present
for scanning. (Document title)

Scanned copy is best available.

Page 31-35 ARE OUT OF ORDER. (Misc.)